parental character string or a complement thereof, wherein the oligonucleotide or peptide character strings are representations of oligonucleotides or peptides;

c) creating the set of derivatives of the parental character string, wherein the derivatives comprise sequence variant strings each having at least one mutation as compared to the parental character string, the set comprising a plurality of mutations.

44 (AMENDED). The method of claim 43, wherein a plurality of the peptide or single-stranded oligonucleotide sequences are overlapping in sequence.

45 (AMENDED). The method of claim 43, further comprising applying one or more genetic operator to the parental character string, or to one or more of the oligonucleotide or peptide character strings, wherein the genetic operator is selected from:

a mutation of the parental character string or of one or more of the oligonucleotide or peptide character strings, a multiplication of the parental character string or of one or more of the oligonucleotide or peptide character strings;

a fragmentation of the parental character string or of one or more of the oligonucleotide or peptide character strings;

a crossover between the parental character string and an additional character string, or between one or more of the oligonucleotide or peptide character strings, or between one or more of the oligonucleotide or peptide character strings and the parental character string, or between one or more of the oligonucleotide or peptide character strings and an additional character string;

a ligation of the parental character string with an additional character string;

a ligation of one or more of the oligonucleotide or peptide character strings with one or more additional character string;

a ligation of a plurality of the oligonucleotide or peptide character strings;

a ligation of one or more of the oligonucleotide or peptide character strings with the parental character string;

an elitism calculation;

a calculation of sequence homology or sequence similarity of an alignment comprising the parental character string or of one or more of the oligonucleotide or peptide character strings;

a recursive use of one or more genetic operator for evolution of any of the character strings;

application of a randomness operator to the parental character string, or to one or more of the oligonucleotide or peptide character strings;

a deletion mutation of the parental character string, or one or more of the oligonucleotide or peptide character strings;

an insertion mutation into the parental character string, or into one or more of the oligonucleotide or peptide character strings;

subtraction of the parental character string, or of one or more of the oligonucleotide or peptide character strings, with an inactive sequence;

selection of the parental character string, or of one or more of the oligonucleotide or peptide character strings, with an active sequence; and,

death of the parental character string, or one or more of the oligonucleotide or peptide character strings.

49 (AMENDED). The method of claim 47, further comprising:

g) selecting or screening the library for one or more recombinant polynucleotide or polypeptide having a desired property.

50 (AMENDED). The method of claim 49, further comprising:

h) deconvoluting the sequence of the one or more selected polynucleotide or polypeptide.

51 (AMENDED). The method of claim 50, wherein the sequence of the one or more selected polynucleotide is deconvoluted by sequencing the selected polynucleotide, or by digesting the one or more selected polynucleotide.

52 (AMENDED). The method of claim 50, wherein the sequence is deconvoluted by positional deconvolution of the one or more selected polynucleotide.

53 (AMENDED). The method of claim 47, further comprising reiterative shuffling or selection of the library of recombinant nucleic acids.

These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter or agreement with any objection or rejection of record. In accordance with the requirements of 37 C.F.R. § 1.121, a marked up version showing the changes to the claims, is attached herewith as Appendix A. For the Examiner's convenience, a complete claim set of the currently pending claims is also submitted herewith as Appendix B.